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Jameco Part Number 219053 (CXE15-48S3V3)

# CXE15 Series

## Single output

DC/DC CONVERTERS | 10.8-15W High Efficiency DC/DC Converters | 1

- **High efficiency topology, 87% typical at 5V**
- **Industry standard footprint**
- **Wide operating temperature, up to and exceeding 70˚C (natural convection)**
- **90% to 110% output trim**
- **No minimum load**
- **Overvoltage protection**
- **Remote on/off control**

The CXE15 is a new high efficiency open frame isolated 15 Watt converter series in an industry standard footprint. The first four models in the series feature an input voltage range of 33 to 75VDC and are available in output voltages of 5V, 3.3V, 2.5V and 1.8V. The output voltage on each model is adjustable from 90% to 110% of the nominal value. Typical efficiencies for the models are 87% for the 5V, 86% for the 3.3V, 85% for the 2.5V and 83% for the 1.8V version. The CXE15 series also has a remote on/off capability with active high or active low logic. Overcurrent and overvoltage protection features are included as standard. With full international safety approval including EN60950 and cUL1950, the CXE15 reduces compliance costs and time to market.

CE (LVD) cULus TÜV

2 YEAR WARRANTY

***All specifications are typical at nominal input, full load at 25°C unless otherwise stated***

## SPECIFICATIONS

### OUTPUT SPECIFICATIONS

| | | |
|---|---|---|
| Voltage adjustability | | 90% to 110% |
| Total error band | (See Note 11) | ±3.5% max. |
| Line regulation<br>Low line to high line | 1V8 and 2V5 models<br>3V3 and S05 models | 0.5% max.<br>0.1% max. |
| Load regulation<br>Full load to min. load | 1V8 model<br>2V5 model<br>3V3 and S05 models | 2.0% max.<br>1.5% max.<br>0.5% max. |
| Minimum load | | 0% |
| Overshoot | 1V8 and 2V5 models<br>3V3 and S05 models | 3.5% max.<br>None |
| Undershoot | | None |
| Ripple and noise<br>(See Note 1)<br>5Hz to 20MHz | 1V8 and 2V5 models<br><br>3V3 and S05 models | 40mV pk-pk<br>14mV rms<br>70mV pk-p<br>20mV rms |
| Transient response<br>(See Note 2)<br>typ. deviation | 1V8 and 2V5 models<br>3V3 and S05 models | 150mV<br>100mV<br>400µs recovery to within total error band |

### INPUT SPECIFICATIONS

| | | |
|---|---|---|
| Input voltage range | 48Vin nominal | 33 to 75VDC |
| Input current | No load<br>Remote OFF | 35mA max.<br>25mA max. |
| Input current (max.) | (See Note 4) | 0.55A max. @ Io max. and Vin = 33 to 75V |
| Input reflected ripple | (See Note 6) | 5mA (pk-pk) typ. |
| Active high remote ON/OFF<br>Logic compatibility<br>ON<br>OFF | | (See Note 10)<br>Open collector ref to -input<br>Open circuit or >2VDC<br><1.2VDC |
| Undervoltage lockout | Power up<br>Power down | 33V (typ.)<br>30V (typ.) |
| Start-up time<br>(See Note 7) | Power up<br>Remote ON/OFF | 1.5ms (typ.)<br>2.5ms (typ.) |

### EMC CHARACTERISTICS

| | | |
|---|---|---|
| Conducted emissions | EN55022 (See Note 3)<br>EN55022 (See Note 3) | Level A<br>Level B |
| Radiated emissions | EN55022 (See Longform data sheet) | Level B |
| Immunity: | | |
| ESD air | EN61000-4-2 | 8kV, 15kV |
| ESD contact | EN61000-4-2 | 6kV, 8kV |
| Radiated field enclosure | EN61000-4-3 | 10V/m |
| Conducted (DC power) | EN61000-4-6 | 10V |
| Conducted (signal) | EN61000-4-6 | 10V (See Note 8) |
| Input transients | ETS 300 132-2, ETR 283 | |

### GENERAL SPECIFICATIONS

| | | |
|---|---|---|
| Efficiency | | See table |
| Operational insulation | Input/output | 1500VDC |
| Switching frequency | Fixed | 265kHz typ. |
| Approvals and standards<br>(See Note 5) | | UL/cUL1950, EN60950<br>TÜV Rheinland |
| Material flammability | | UL94V-0 |
| Weight | | 12g (0.42oz) |
| MTBF | MIL-HDBK-217F | >600,000 hours |
| Representative model: | 48S05 @ 48Vin, 40°C, 100% load ground benign | |
| | BELLCORE 332 | >1,500,000 hours |

### ENVIRONMENTAL SPECIFICATIONS

| | | |
|---|---|---|
| Thermal performance<br>(See Note 9) | Operating ambient temp. (3.3V and 5V) | -40°C to +65°C |
| | Operating ambient temp. (1.8V and 2.5V) | -40°C to +70°C |
| | Non-operating (All models) | -40°C to +120°C |

# CXE15 Series

## Single output

ARTESYN TECHNOLOGIES



For the most current data and application support visit www.artesyn.com/powergroup/products.htm

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OVP | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | REGULATION | | MODEL NUMBER (10) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | LINE | LOAD | |
| 10.8W | 33-75VDC | 2.3VDC | 1.8V | 0A | 6A | 83% | 0.3% | 2.0% | CXE15-48S1V8 |
| 15W | 33-75VDC | 3.2VDC | 2.5V | 0A | 6A | 85% | 0.3% | 1.5% | CXE15-48S2V5 |
| 15W | 33-75VDC | 4.0VDC | 3.3V | 0A | 4.5A | 86% | 0.1% | 0.5% | CXE15-48S3V3 |
| 15W | 33-75VDC | 6.0VDC | 5.0V | 0A | 3A | 87% | 0.1% | 0.5% | CXE15-48S05 |

### Notes

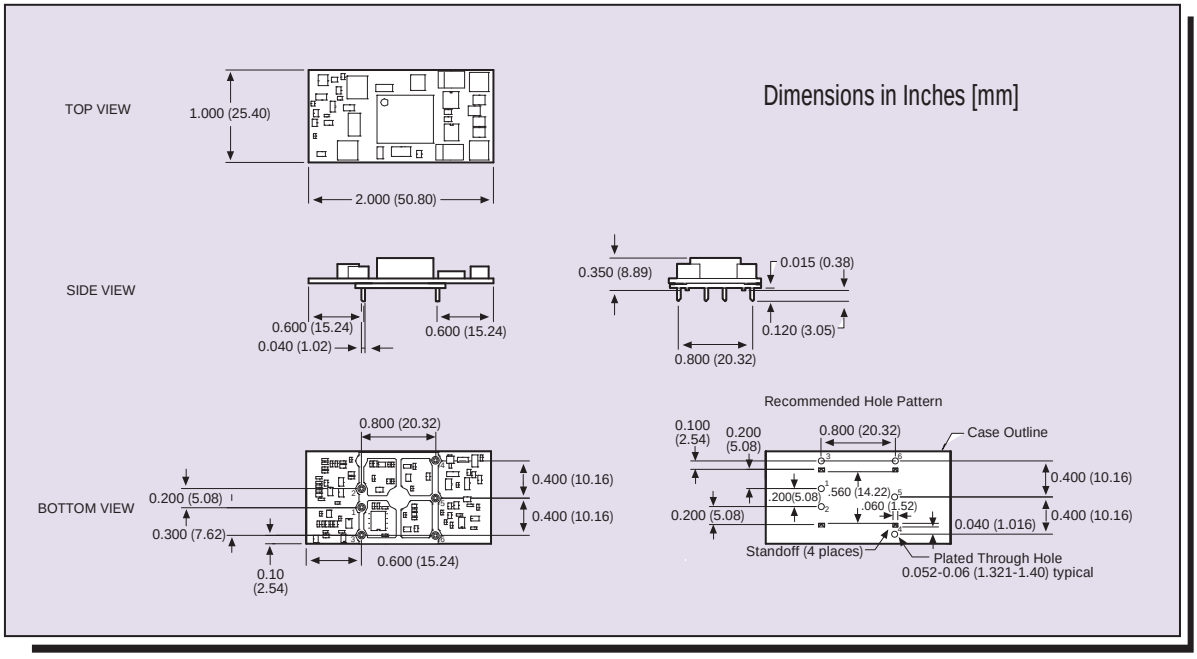
1 Measured as per recommended set-up. See Application Note 116 for details.
2 di/dt = 0.1A/µs, Vin = 48VDC, Tc = 25°C, load change = 0.5 Io max. to 0.75 Io max. and 0.75 Io max. to 0.5 Io max.
3 The CXE15 meets level A and level B conducted emissions only with external components connected before the input pins to the converter. See Application Note 116 for details.
4 Recommended input fusing is a 2A HRC 200V rated fuse.
5 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
6 Measured with external filter. See Application Note 116 for details.
7 Start-up into resistive load.
8 Signal line assumed < 3m in length.
9 Operating ambient temperatures are specified at natural convection. Higher operating temperatures are possible with increased airflow. See Application Note 116 for details.
10 Remote ON/OFF (pin 3) and Trim (pin 5) are currently available individually or together by special order only. Manufacturing lead times may apply. The base model includes pins 1, 2, 4, and 6. Use the suffix '–R' for pin 3 with negative logic, '-S' for pin 3 with positive logic, and '-T' for the Trim pin. For example, a CXE 5V output with all six pins and positive remote ON/OFF logic should be ordered as 'CXE15-48S05-ST'.
11 This parameter is calculated at worst case line, load, temperature and initial settings.

| PROTECTION | |
|---|---|
| Short circuit protection | Continuous |
| Overvoltage protection | Non-latching clamp |

| TELECOM SPECIFICATION | |
|---|---|
| Central office interface A | ETS300-132-2, input voltage and current requirements |

**CAUTION: Hazardous internal voltages and high temperatures. Ensure that unit is not user accessible.**

| PIN CONNECTIONS | |
|---|---|
| PIN NUMBER | FEATURE |
| 1 | Vin - |
| 2 | Vin + |
| 3 | On/Off (See Note 10) |
| 4 | Vout + |
| 5 | Trim (See Note 10) |
| 6 | Vout - |




**International Safety Standard Approvals**

c UL us — UL/cUL 1950 3rd edition. File No. E135734

TÜV — TÜV Rheinland. Certificate No. R2074133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